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www.miamidade.gov

NOTICE OF ACCEPTANCE (NOA)

High Velocity Hurricane Protection Systems 3390 Mercantile Avenue Naples, Florida 34104

SCOPE:

This NOA is being issued under the applicable rules and regulations governing the use of construction materials. The documentation submitted has been reviewed and accepted by Miami-Dade County RER-Product Control Section to be used in Miami Dade County and other areas where allowed by the Authority Having Jurisdiction (AHJ).

This NOA shall not be valid after the expiration date stated below. The Miami-Dade County Product Control Section (In Miami Dade County) and/or the AHJ (in areas other than Miami Dade County) reserve the right to have this product or material tested for quality assurance purposes. If this product or material fails to perform in the accepted manner, the manufacturer will incur the expense of such testing and the AHJ may immediately revoke, modify, or suspend the use of such product or material within their jurisdiction. RER reserves the right to revoke this acceptance, if it is determined by Miami-Dade County Product Control Section that this product or material fails to meet the requirements of the applicable building code.

This product is approved as described herein, and has been designed to comply with the High Velocity Hurricane Zone of the Florida Building Code.

DESCRIPTION: "Category 5" Aluminum Accordion Shutter

APPROVAL DOCUMENT: Drawing No. 10-HVH-0001, titled "Category 5 Accordion Shutter System", sheets 1 through 5 of 5, prepared by Engineering Express, dated February 26, 2010, last revision dated January 15, 2012, signed and sealed by Frank L. Bennardo, P.E., bearing the Miami-Dade County Product Control Revision stamp with the Notice of Acceptance number and expiration date by the Miami-Dade County Product Control Section.

MISSILE IMPACT RATING: Large and Small Missile Impact Resistant

LABELING: Each unit shall bear a permanent label with the manufacturer's name or logo, city, state, the following statement: "Miami-Dade County Product Control Approved", and NOA number, per TAS-201, TAS-202, and TAS-203, unless otherwise noted herein.

RENEWAL of this NOA shall be considered after a renewal application has been filed and there has been no change in the applicable building code negatively affecting the performance of this product.

TERMINATION of this NOA will occur after the expiration date or if there has been a revision or change in the materials, use, and/or manufacture of the product or process. Misuse of this NOA as an endorsement of any product, for sales, advertising or any other purposes shall automatically terminate this NOA. Failure to comply with any section of this NOA shall be cause for termination and removal of NOA.

ADVERTISEMENT: The NOA number preceded by the words Miami-Dade County, Florida, and followed by the expiration date may be displayed in advertising literature. If any portion of the NOA is displayed, then it shall be done in its entirety.

INSPECTION: A copy of this entire NOA shall be provided to the user by the manufacturer or its distributors and shall be available for inspection at the job site at the request of the Building Official.

This NOA revises NOA # 10-0316.02 and consists of this page 1, evidence submitted pages E-1 & E-2 as well as approval document mentioned above.

The submitted documentation was reviewed by Helmy A. Makar, P.E., M.S.

MIAMI-DADE COUNTY APPROVED

NOA No. 12-0523.15

Approval Date: 08/09/2012

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High Velocity Hurricane Protection Systems

NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED

1. EVIDENCE SUBMITTED UNDER PREVIOUS APPROVAL #04-1220.03

A. DRAWINGS

1. Drawing No. 04-04, titled "Category 5 Accordion Shutter System", sheets 1 through 4 of 4, prepared by Al-Farooq Corporation, dated February 28, 2004, last revision #A dated January 25, 2005, signed and sealed by Humayoun Farooq, P.E.

B. TESTS

- 1. Test report on Large Missile Impact Test and Cyclic Wind Pressure Test of Category 5 Accordion Shutter System, prepared by Hurricane Engineering & Testing, Inc., Report No. HETI-03-1842, dated August 18, 2003, signed and sealed by Rafael E. Droz-Seda, P.E.
- 2. Test report on Uniform Static Air Pressure Test of Category 5 Accordion Shutter System, prepared by Hurricane Engineering & Testing, Inc., Report No. HETI-03-1843, dated August 18, 2003, signed and sealed by Rafael E. Droz-Seda, P.E.

C. CALCULATIONS

1. Anchor analysis dated March 23, 2004, Sheets A-1 through A-12 & AP-1 through AP-16, prepared by Al-Farooq Corporation, signed and sealed by Humayoun Farooq, P.E.

D. **QUALITY ASSURANCE**

1. By Miami-Dade County Building Code Compliance Office.

E. MATERIAL CERTIFICATIONS

1. Certified Tensile Test Report from Hurricane Engineering & Testing Inc., Report No. HETI-03-T052, dated September 03, 2003, for aluminum accordion sample.

F. STATEMENTS

1. Statement letter of conformance by Al-Farooq Corporation, dated October 26, 2004, signed and sealed by Humayoun Farooq, P.E.

2. EVIDENCE SUBMITTED UNDER PREVIOUS APPROVAL # 10-0316.02

A. DRAWINGS

1. Drawing No. 10-HVH-0001, titled "Category 5 Accordion Shutter System", sheets 1 through 5 of 5, prepared by Engineering Express, dated February 26, 2010, last revision dated April 30, 2010, signed and sealed by Frank L. Bennardo, P.E.

Helmy A. Makar, P.E., M.S. Product Control Unit Supervisor

NOA No. 12-0523.15

Expiration Date: 04/14/2015 Approval Date: 08/09/2012

High Velocity Hurricane Protection Systems

NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED

B. TESTS

1. None.

C. CALCULATIONS

1. Anchor analysis dated March 07, 2010, Sheets 1 through 32 of 32, prepared by Engineering Express, signed and sealed by Frank L. Bennardo, P.E.

D. QUALITY ASSURANCE

1. By Miami-Dade County Building Code Compliance Office.

E. MATERIAL CERTIFICATIONS

1. None.

F. STATEMENTS

1. Statement letter of conformance by Engineering Express, dated March 11, 2010, signed and sealed by Frank L. Bennardo, P.E.

3. NEW EVIDENCE SUBMITTED

A. DRAWINGS

1. Drawing No. 10-HVH-0001, titled "Category 5 Accordion Shutter System", sheets 1 through 5 of 5, prepared by Engineering Express, dated February 26, 2010, last revision dated January 15, 2012, signed and sealed by Frank L. Bennardo, P.E.

B. TESTS

1. None.

C. CALCULATIONS

1. None.

D. QUALITY ASSURANCE

1. By Miami-Dade County Department of Regulatory and Economic Resources.

E. MATERIAL CERTIFICATIONS

1. None.

F. STATEMENTS

1. Statement letter of compliance with FBC 2010 by Engineering Express, dated May 18, 2012, signed and sealed by Frank L. Bennardo, P.E.

Helmy A. Makar, P.E., M.S. Product Control Unit Supervisor

NOA No. 12-0523.15

Expiration Date: 04/14/2015 Approval Date: 08/09/2012

CATEGORY 5™ ACCORDION SHUTTER SYSTEM

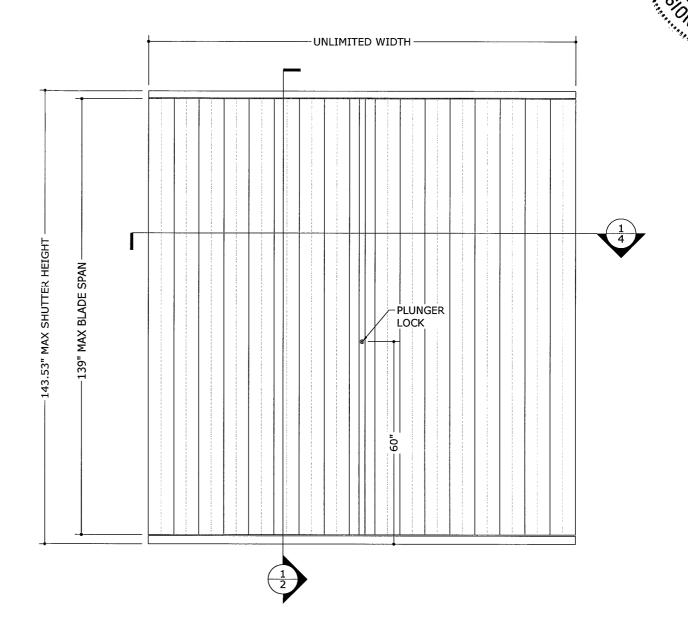
GENERAL NOTES

- 1. THE SYSTEM DESCRIBED HEREIN HAS BEEN DESIGNED AND TESTED IN ACCORDANCE WITH THE 2010 FLORIDA BUILDING CODE, FOR USE WITHIN THE HIGH VELOCITY HURRICANE ZONE, PER TAS 201, TAS 202 AND TAS 203 TEST
- 2. NO 33-1/3% INCREASE IN ALLOWABLE STRESS HAS BEEN USED IN THE DESIGN OF THIS SYSTEM. WIND LOAD DURATION FACTOR Cd=1.6 HAS BEEN USED FOR WOOD ANCHOR DESIGN.
- 3. POSITIVE AND NEGATIVE DESIGN PRESSURES CALCULATED FOR USE WITH THIS SYSTEM SHALL BE DETERMINED BY OTHERS ON A JOB-SPECIFIC BASIS IN ACCORDANCE WITH THE GOVERNING CODE.
- 4. THE SYSTEM DETAILED HEREIN IS GENERIC AND DOES NOT PROVIDE INFORMATION FOR A SPECIFIC SITE. FOR SITE CONDITIONS DIFFERENT FROM THE CONDITIONS DETAILED HEREIN, A LICENSED ENGINEER OR REGISTERED ARCHITECT SHALL PREPARE SITE SPECIFIC DOCUMENTS FOR USE IN CONJUNCTION WITH THIS DOCUMENT.
- 5. PERMIT HOLDER SHALL VERIFY THE ADEQUACY OF THE EXISTING STRUCTURE TO WITHSTAND SUPERIMPOSED LOADS. WOOD BUCKS (BY OTHERS) SHALL BE ANCHORED PROPERLY TO TRANSFER LOADS TO THE EXISTING STRUCTURE.
- 6. ALL EXTRUSIONS SHALL BE 6063-T6 ALUMINUM ALLOY, UNLESS NOTED OTHERWISE.
- 7. PRODUCT MARKINGS SHALL BE PLACED ON THE OUTSIDE OF THE SHUTTER AT THE BOTTOM OF THE CENTERMATE, AND SHALL BE PERMANENTLY LABELED WITH THE FOLLOWING MINIMUM INFORMATION:

HIGH VELOCITY HURRICANE PROTECTION SYSTEMS NAPLES, FLORIDA TAS 201, 202 & 203

MIAMI-DADE COUNTY PRODUCT APPROVED

- 8. ALL BOLTS & WASHERS SHALL BE ZINC COATED STEEL, GALVANIZED STEEL, OR STAINLESS STEEL WITH A MINIMUM TENSILE YIELD STRENGTH OF 60 KSI. ALL 3/16"Ø OR 1/4"Ø POP RIVETS SHALL BE 5056-H32 ALUMINUM ALLOY OR STRONGER.
- 9. ALL STEEL IN CONTACT WITH ALUMINUM SHALL BE PAINTED OR PLATED AS PRESCRIBED IN THE ABOVE-NOTED BUILDING CODE.



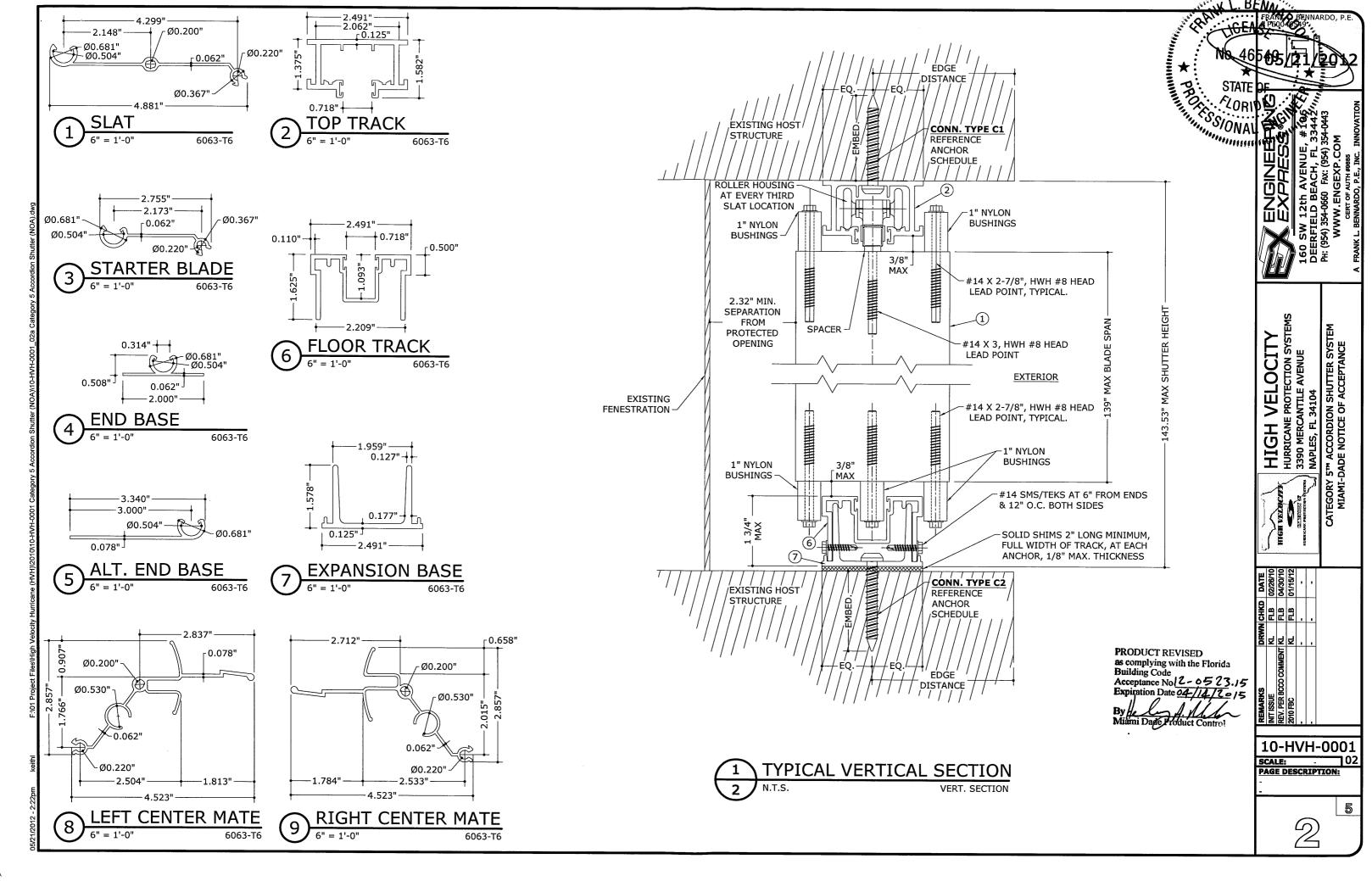
ALLOWABLE DESIGN PRESSURES

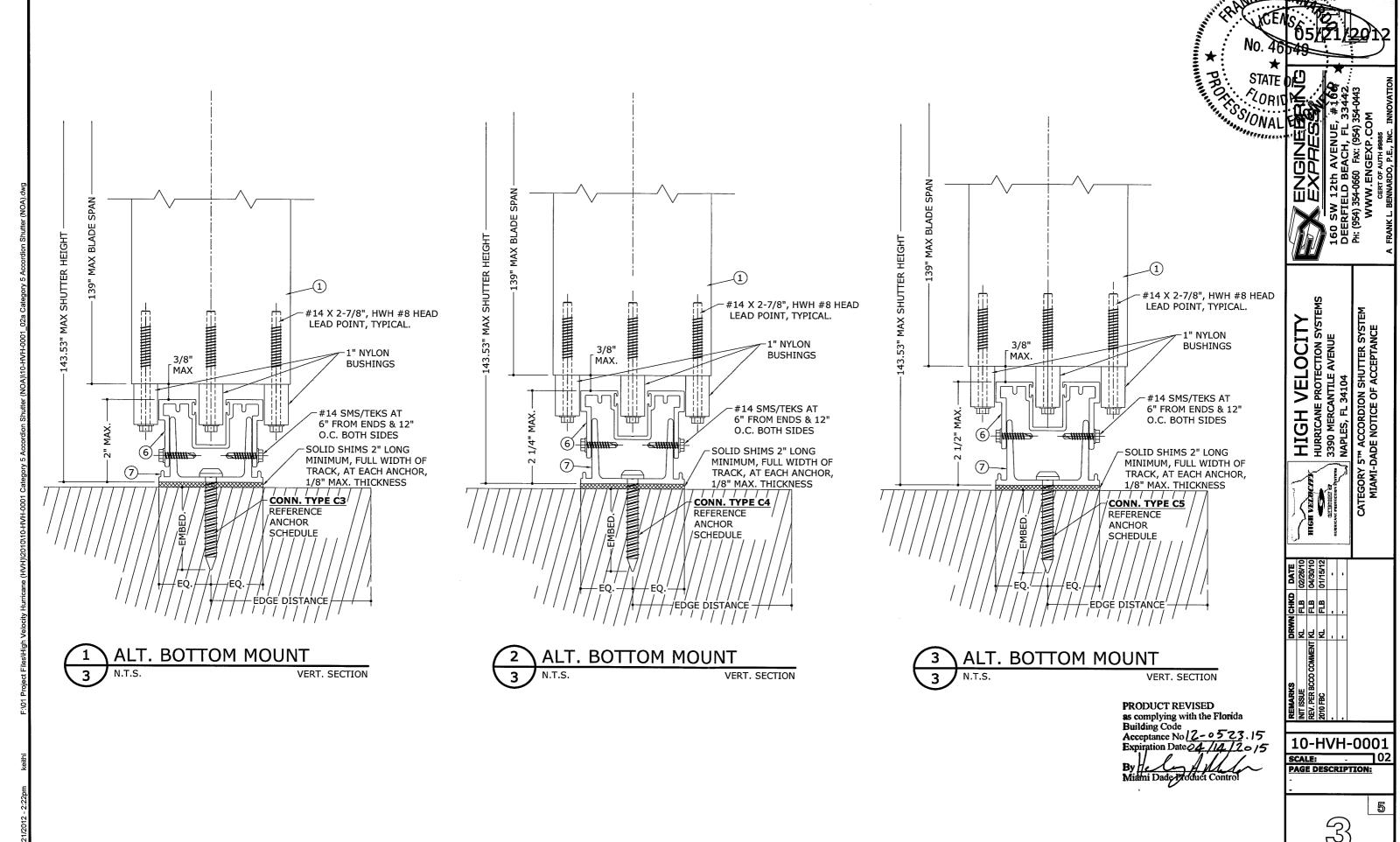
> +140 PSF -140 PSF

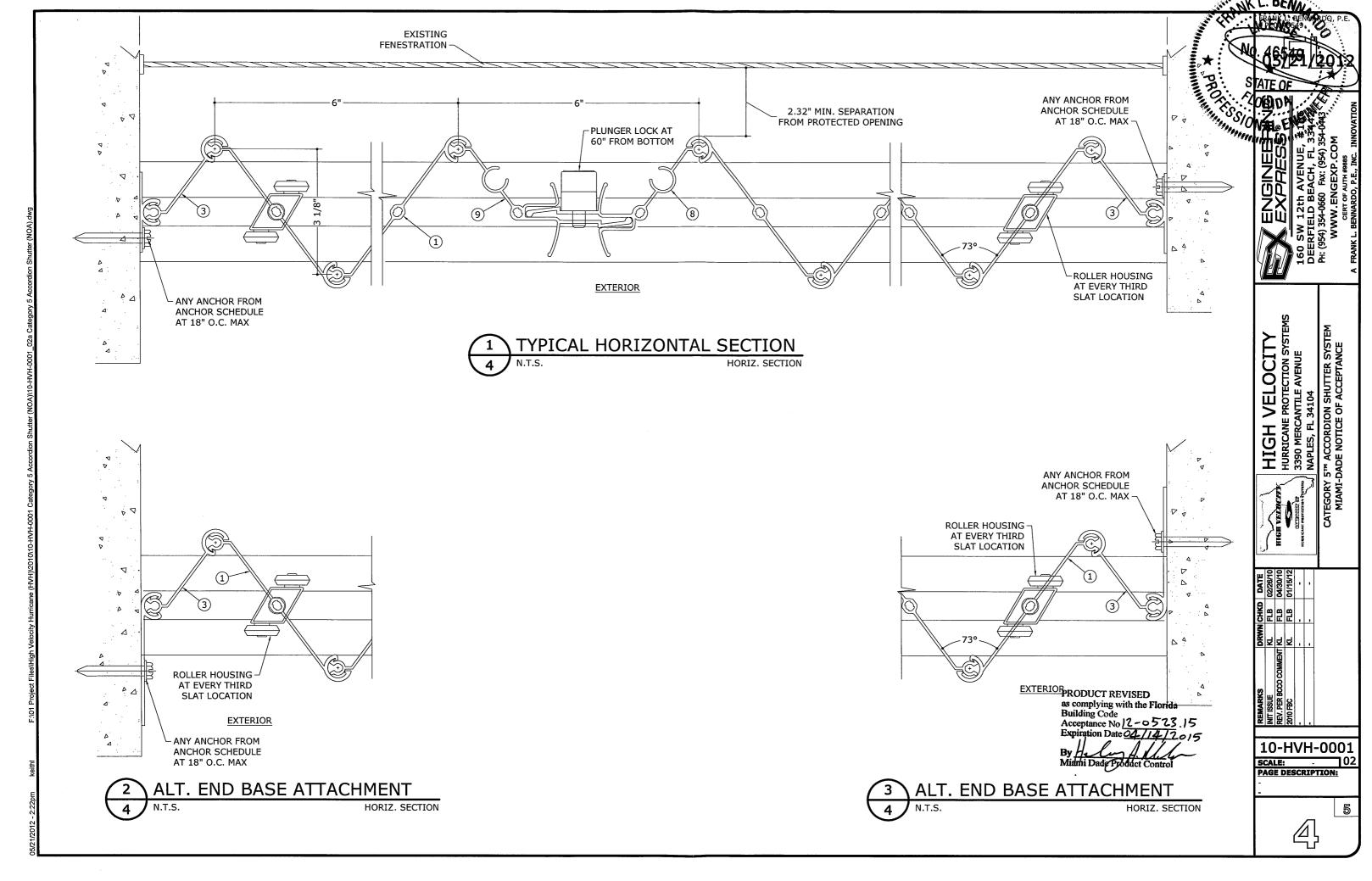
PRODUCT REVISED as complying with the Florida Acceptance No 12-0523.15 Expiration Date 04/14/2015

10-HVH-0001 PAGE DESCRIPTION:

HIGH VELOCITY







ANCHOR SCHEDULE:

		Γ	CEE ANCHOR TYPE FOR FOCE DISTANCES										
<u> </u>			SEE ANCHOR TYPE FOR EDGE DISTANCES										
HOST STRUCT.		LOAD			Up To			1		Jp To 1		_	
	ANCHOR	(psf)			NN TY	i —	ı	CONN TYPE					
	, to		C1	C2	C3	C4	C5	C1	C2	C3	C4	C5	
	5/16" ITW TAPCON XL WITH 2-1/4" EMBED AND	60	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	
		80	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	
	1-9/16" EDGE DISTANCE	100	6.0"	6.0"	6.0"	6.0"	5.8"	5.7"	5.6"	5.3"	5.0"	4.8"	
	(2899psi MIN CONC)	120	5.7"	5.5"	5.3"	5.0"	4.7"	4.7"	4.6"	4.4"	4.1"	3.9"	
		140	4.9"	4.7"	4.5"	4.2"	4.0"	4.1"	3.9"				
	5/16" ITW TAPCON XL WITH 2-1/4" EMBED AND 2-3/16" EDGE DISTANCE	60	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	
		80	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	
		100	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	
	(2899psi MIN CONC)	120	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	5.6"	5.3"	4.9"	
		140	6.0"	6.0"	5.8"	5.4"	5.1"	5.5"	5.1"	4.8"	4.5"	4.2"	
	5/16" ITW TAPCON XL WITH 2-1/4" EMBED AND	60	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	
		80	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	
	3-1/8" EDGE DISTANCE	100	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	
	(2899psi MIN CONC)	120	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	5.6"	5.3"	5.0"	
		140	6.0"	6.0"	5.8"	5.4"	5.1"	5.7"	5.1"	4.8"	4.5"	4.2"	
	1/4-20 POWERS CALK-IN WITH 7/8" MIN EMBED AND 2" EDGE DISTANCE (3000psi MIN CONC)	60	4.9"	4.9"	4.8"	4.7"	4.6"	4.1"	4.1"	4.0"	3.9"	3.7"	
		80	3.7"	3.6"	3.5"	3.4"	3.3"	3.1"	3.0"	2.9"	2.8"	2.7"	
CONCRETE		100	2.9"	2.9"	2.8"	2.7"	2.6"						
8		120											
Ö		140											
ĺ	1/4-20 POWERS CALK-IN	60	5.9"	5.9"	5.8"	5.6"	5.4"	4.9"	4.9"	4.7"	4.6"	4.4"	
ĺ	WITH 7/8" MIN EMBED AND	80	4.4"	4.3"	4.2"	4.1"	3.9"	3.7"	3.6"	3.5"	3.3"	3.2"	
l	2-1/4" EDGE DISTANCE (3000psi MIN CONC)	100	3.5"	3.4"	3.3"	3.2"	3.0"	2.9"	2.8"	2.7"	2.6"	2.5"	
		120	2.9"	2.8"	2.7"	2.6"	2.5"					<i>\\\\\\</i>	
		140	2.5"										
	1/4-20 POWERS CALK-IN WITH 7/8" MIN EMBED AND 2-1/2" EDGE DISTANCE (3000psi MIN CONC)	60	6.0"	6.0"	6.0"	6.0''	6.0"	5.6"	5.6"	5.4"	5.2"	5.0"	
		80	5.0"	5.0"	4.8"	4.6"	4.4"	4.2"	4.1"	3.9"	3.8"	3.6"	
ĺ		100	4.0"	3.9"	3.8"	3.6"	3.4"	3.3"	3.2"	3.1"	3.0"	2.8"	
l		120	3.3"	3.2"	3.1"	3.0"	2.8"	2.8"	2.7"	2.6"	11/////		
		140	2.8"	2.8"	2.6"	2.5"				V/////			
	1/4-20 POWERS CALK-IN WITH 7/8" MIN EMBED AND 3" EDGE DISTANCE (3000psi MIN CONC)	60	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	6.0"	
		80	6.0"	6.0"	5.9"	5.7"	5.4"	5.2"	5.1"	4.9"	4.6"	4.4"	
		100	5.0"	4.9"	4.6"	4.4"	4.2"	4.1"	4.0"	3.8"	3.6"	3.5"	
		120	4.1"	4.0"	3.8"	3.6"	3.4"	3.4"	3.3"	3.2"	3.0"	2.8"	
		140	3.5"	3.4"	3.2"	3.1"	2.9"	2.9"	2.8"	2.7"	2.5"	111111	

\Box			5/8" MIN EDGE DISTANCE										
5 إ				Spans	Up To	120"		Spans Up To 143.53"					
HOST	ANCHOR	LOAD (psf)		CC	NN TY	PE		CONN TYPE					
		(bai)	C1	C2	C3	C4	C5	C1	C2	C3	C4	C5	
UMIN	#14 410 STAINLESS STEEL SMS OR SDS TO 1/8" MIN. 6063-T5 ALUMINUM OR A36 STEEL, FULL THREAD PENETRATION	60	6.0"	5.1"	4.9"	4.6"	4.3"	5.1"	4.2"	4.0"	3.7"	3.5"	
		80	4.6"	3.7"	3.5"	3.3"	3.0"	3.8"	3.0"	2.8"	2.6"	2.4"	
		100	3.6"	2.9"	2.7"	2.5"	2.3"	3.0"	2.4"	2.2"	2.0"	1.9"	
		120	3.0"	2.4"	2.2"	2.0"	1.9"	2.5"	2.0"	1.8"	1.7"	1.5"	
		140	2.5"	2.0"	1.9"	1.7"	1.6"	2.1"	1.7"	1.5"	1.4"	1.3"	

			3/4" MIN EDGE DISTANCE										
HOST STRUCT	ANCHOR	LOAD			Up To			Spans Up To 143.53" CONN TYPE					
		(psf)	C1	C2	C3	C4	C5	C1	C2	С3	C4	C5	
WOOD (G=0.55 MIN)	#14 410 STAINLESS STEEL SMS TO G=0.55 MIN WOOD W/ 1-1/2" MIN. THREAD	60	4.8"	4.8"	4.7"	4.6"	4.5"	4.0"	4.0"	3.9"	3.8"	3.7"	
		80	3.6"	3.5"	3.5"	3.4"	3.3"	3.0"	2.9"	2.9"	2.8"	2.7"	
		100	2.8"	2.8"	2.7"	2.7"	2.6"	2.4"	2.3"	2.3"	2.2"	2.1"	
	PENETRATION	120	2.4"	2.3"	2.3"	2.2"	2.1"	2.0"	1.9"	1.9"	1.8"	1.8"	
		140	2.0"	2.0"	1.9"	1.9"	1.8"	1.7"	1.7"	1.6"	1.6"	1.5"	

ANCHOR NOTES:

- 1. ANCHORS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS' RECOMMENDATIONS.
- EDGE DISTANCE OF 5/8" IS ACCEPTABLE FOR ANCHORS TO STEEL OR ALUMINUM.
- 3. WHERE ANCHORS FASTEN TO NARROW FACE OF STUD FRAMING, ANCHOR SHALL BE LOCATED IN CENTER OF NOMINAL 2x (MIN) WOOD STUD (i.e. 3/4" EDGE DISTANCE IS ACCEPTABLE FOR ANCHORS TO WOOD FRAMING).
- 4. WOOD HOST STRUCTURE SHALL BE "SOUTHERN PINE" G=0.55 OR GREATER DENSITY.
- 5. MINIMUM EMBEDMENT SHALL BE AS NOTED IN ANCHOR SCHEDULE. MINIMUM EMBEDMENT AND EDGE DISTANCE EXCLUDES STUCCO, FOAM, BRICK, AND OTHER WALL FINISHES.
- 6. ANCHOR SCHEDULE APPLIES TO ALL PRODUCTS
 CERTIFIED HEREIN, BUT ONLY PROVIDES MAXIMUM ALLOWABLE
 ANCHOR SPACING. MAXIMUM ALLOWABLE SPANS AND
 PRESSURES INDICATED OTHERWISE SHALL APPLY.
- 7. WHERE EXISTING STRUCTURE IS WOOD FRAMING, EXISTING CONDITIONS MAY VARY. FIELD VERIFY THAT FASTENERS ARE INTO ADEQUATE WOOD FRAMING MEMBERS, NOT INTO PLYWOOD.
- 8. WOOD BUCKS (BY OTHERS) SHALL BE ANCHORED PROPERLY TO TRANSFER LOADS TO THE EXISTING STRUCTURE.
- 9. MACHINE SCREWS SHALL HAVE MINIMUM OF 1/2" ENGAGEMENT OF THREADS IN BASE ANCHOR AND MAY HAVE EITHER A PAN HEAD, TRUSS HEAD, OR WAFER HEAD ("SIDEWALK BOLT") U.N.O.
- 10. MACHINE SCREWS SHALL BE INSTALLED WITH FULL ENGAGEMENT OF THREADS INTO METAL HOST STRUCTURE AND MAY HAVE EITHER A FLAT HEAD, PAN HEAD, TRUSS HEAD, OR OTHER HEAD STYLES.
- 11. \square DESIGNATES ANCHOR CONDITIONS WHICH ARE NOT ACCEPTABLE FOR USE.

PRODUCT REVISED as complying with the Florida Building Code Acceptance No 2-0523.15 Expiration Date 04/14/2015

10-HVH-0001 SCALE: 02 PAGE DESCRIPTION:

5

HIGH VELOCITY
HURRICANE PROTECTION SYSTEMS
3390 MERCANTILE AVENUE
NAPLES, FL 34104 호보보